



CJTF-7 SAFETY GRAM



Heat Injury Prevention Chart

Fluid Replacement Guidelines for Warm Weather Training
(Applies to average heat acclimated soldier wearing BDU, Hot Weather)

Heat Category	WBGT Index, °F	Easy Work		Moderate Work		Hard Work	
		Work/Rest	Water Intake, Qt/hr	Work/Rest	Water Intake, Qt/hr	Work/Rest	Water Intake, Qt/hr
1	78-81.9	NL	1/2	NL	3/4	40/20 min	3/4
2 (Green)	82-84.9	NL	1/2	50/10 min	3/4	30/30 min	1
3 (Yellow)	85-87.9	NL	3/4	40/20 min	3/4	30/30 min	1
4 (Red)	88-89.9	NL	3/4	30/30 min	3/4	20/40 min	1
5 (Black)	> 90	50/10 min	1	20/40 min	1	10/50 min	1

- The work rest times and fluid replacement volumes hydration volumes will sustain performance for at least 4 hours of work in the specified heat category. Individual water needs will vary approx ¼ qt or 8 ounces per hour.
- NL= no limit to work time per hour.
- Rest means minimal physical activity (sitting or standing), accomplished in shade if possible.
- CAUTION: Hourly fluid intake should not exceed 1^{1/2} quarts.**
- Daily fluid intake should not exceed 12 quarts.**
- Wearing body armor adds 5 degrees Fahrenheit to WBGT Index
- Wearing MOPP overgarment add 10 degrees Fahrenheit to WBGT Index.

Examples of Work Load Categories:

Easy Work	Moderate Work	Hard Work
- Walking hard surface at 2.5 mph, ≤ 30-pound load - Weapon maintenance - Manual of Arms - Guard duty - Marksmanship training - Drill and ceremony	- Walking loose sand at 2.5 mph, no load - Walking hard surface at 3.5 mph, ≤ 40-pound load - Calisthenics - Patrolling - Individual movement techniques; i.e. low crawl, high crawl - Defensive position construction	- Walking hard surface at 3.5 mph, ≥ 40-pound load - Walking loose sand at 2.5 mph with load - Field assaults - Rifle bayonet training - Road march > 4 mph

Note: Soldiers who are overweight, dieting, or past heat casualties are more prone to heat injuries. As a result, their activities must be closely monitored.



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Dehydration Can Kill

Dehydration is deadly and hits fast. During high temperatures, a resting soldier can lose as much as pint of water per hour through sweating! Leaders must keep track of how much their personnel drink to ensure they drink enough water! Leader should brief their personnel on the signs and first aid for heat related injuries.

ARMY HEAT INJURY PREVENTION PROGRAM



Water Consumption Table

	Easy Work	Moderate Work	Hard Work
Heat Category	Amount to Drink Ql/Hr (one canteen = 1 Ql)		
1	1/2	3/4	3/4
2	1/2	3/4	1
3	3/4	3/4	1
4	3/4	3/4	1
5	1	1	1

Do not drink more than 1 1/2 qts per hour or 12 qts per day.
Eat meals! Important for sodium and other electrolytes.

Easy Work = Walking hard surface 2.5 mph <30# load, Weapon maintenance, Marksmanship training





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HEAT CAN KILL

The effects of excessive heat and humidity on an individual can range from simple discomfort and reduced physical and mental efficiency to heat cramps, heat exhaustion, heatstroke, and even...

DEATH

Leaders at every level must ensure that their unit personnel are familiar with the symptoms and the appropriate first aid for heat related injuries. Heat injury prevention is the best first aid for heat injuries.

INDICATIONS OF POSSIBLE HEAT CASUALTY

Common Signs / Symptoms

- DIZZINESS
- HEADACHES
- NAUSEA
- UNSTEADY WALK
- WEAKNESS OR FATIGUE
- MUSCLE CRAMPS

Immediate Action

- REMOVE FROM MISSION
- ALLOW CASUALTY TO REST IN SHADE
- LOOSEN CLOTHING
- TAKE SIPS OF WATER
- CALL FOR A MEDIC OR CALL FOR MEDEVAC

Serious Signs / Symptoms

- HOT BODY
HIGH TEMPERATURE
- CONFUSION, AGITATION
- VOMITING
- INVOLUNTARY BOWEL
MOVEMENT
- CONVULSIONS
- WEAK OR RAPID PULSE
- UNRESPONSIVENESS, COMA

Immediate Action

- **CALL FOR MEDEVAC**
- LAY PERSON DOWN IN SHADE WITH FEET
ELEVATED UNTIL MEDICAL ATTENTION
ARRIVES; UNDRESS INDIVIDUAL AS POSSIBLE
- AGGRESSIVELY APPLY ICE PACKS OR ICE
SHEETS IF AVAILABLE
- POUR COLD WATER OVER CASUALTY AND
FAN
- GIVE SIPS OF WATER WHILE WAITING FOR
MEDICAL PERSONNEL (IF CONSCIOUS)
- MONITOR AIRWAY AND BREATHING



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Warning Signs and Symptoms of Heat Related Injuries



INDICATIONS OF POSSIBLE HEAT CASUALTY

Common Signs / Symptoms

- DIZZINESS
- HEADACHES
- NAUSEA
- UNSTEADY WALK
- WEAKNESS OR FATIGUE
- MUSCLE CRAMPS

Immediate Action

- REMOVE FROM MISSION
- ALLOW CASUALTY TO REST IN SHADE
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Serious Signs / Symptoms

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- WEAK OR RAPID PULSE
- UNRESPONSIVENESS, COMA

Immediate Action

- **CALL FOR MEDEVAC**
- LAY PERSON DOWN IN SHADE WITH FEET
ELEVATED UNTIL MEDICAL ATTENTION
ARRIVES
- UNDRESS INDIVIDUAL AS MUCH AS POSSIBLE
- AGGRESSIVELY APPLY ICE PACKS OR ICE
SHEETS, IF AVAILABLE
- POUR COLD WATER OVER CASUALTY AND
FAN
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MEDICAL PERSONNEL (IF CONSCIOUS)
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Ten Commandments of Preventing Heat Injury

1. Provide adequate water and ensure water breaks are taken every 15 to 20 minutes. Do not exceed 1½ quarts per hour. Thirst is not an adequate indicator of dehydration. Alcohol, coffee, soft drinks, and sports drinks are not good substitutes for water.

Do not use salt tablets!

2. Ensure soldiers gradually adjust to working in the heat. Acclimatization is essential in preventing heat injuries.
3. Schedule work/rest periods. Schedule heavy work for the cooler part of the day (morning or late afternoon). The body generates more heat when heavy work is being performed.
4. Avoid overexertion. Use mechanical aids whenever possible. Assign tasks between several soldiers to reduce the stress on individuals.
5. Use shaded areas: trees, buildings, tents to reduce radiant heating. The temperature in the sun and under the canopy of a tree can vary from 8° to 20°F.
6. Encourage use of sun screens to protect exposed skin.
7. Wear loose-fitting, light-weight, light-colored clothing. Do not layer clothing; more clothing increases the risk of heat injury. Consider protective equipment such as MOPP gear when planning and scheduling activities.
8. Monitor WBGT so the heat-stress index can be evaluated. Environmental conditions, such as temperatures above 70°F (80°F at night), direct sunlight, humidity, and exposure to any toxic agents add to heat stress. The wind reduces the risk of heat stress by increasing the evaporation of sweat.
9. Train soldiers to recognize and treat heat injuries and encourage them to monitor each other for signs of heat stress.
10. Conduct safety meetings to emphasize special heat spell procedures. Be prepared to provide medical assistance.



NOTE TO LEADERS: Authorizing removal of DCU top defeats the natural cooling process the DCU top affords, protection from sunburn & decreasing dehydration. The CJTF-7 uniform standard is DCU top worn during all operations. If necessary, increase frequency of rest periods in shaded areas where removal of DCU top will allow natural cooling to occur.



CJTF-7 SAFETY GRAM



Commander's and Senior NCO's Guide to Risk Management of Heat Casualties

Possible outcomes of inadequate climatic heat management

CASUALTY

Heat Cramps

Heat Exhaustion

Heat Strokes

Water Intoxication (Over Hydration)

RISK SEVERITY

Marginal

Critical

Critical-Catastrophic

Critical-Catastrophic

THE FIVE STEPS OF RISK MANAGEMENT ARE:

- Identify the Hazards
- Assess the Hazards
- Develop Controls
- Implement the Controls
- Supervise and Evaluate

EXAMPLE OF A HEAT INJURY RISK MANAGEMENT MATRIX

Scores assigned to different conditions based on risk for developing a heat injury.
This scoring system: 0= Low risk; 1=Medium risk; 2=High risk; 3=Extreme risk

RISK FACTORS	Level of Risk (For each Factor Circle the Appropriate Condition)			
	0	1	2	3
Risk Management Worksheet	All control measures implemented			Not all control measures implemented
Heat (WBGT at site)	None (Less than Category 1)	Category 1	Category 2 and 3	Category 4 and 5
No. Sequential Days Heat Cat 5	0	1	2-3	≥4
Any Heat Injuries in the Past Two Days	None	Heat Cramps	Heat Exhaustion	Heat Stroke
Work in Past Two Days (see below)	Easy	Easy or Moderate	Moderate or Hard	Hard
Projected Work for the Present Day	Easy	Easy or Moderate	Moderate or Hard	Hard
Heat Acclimatization Days	>13	7-13	3-6	<3
Leader/Cadre Presence	Full time	Substantial	Minimal	None
Length of Duty Time of Cadre	18 Months	7-18 Months	1-6 Month	< 1 Month
Communication System	Radio and Phone	Phone Only	Radio Only	None
Rest in Previous 24 Hours	> 7 Hours	5-7 Hours	2-4 Hours	< 2 Hours

A cumulative score of 25-33 means extreme risk, 16-24 means high risk, 7-15 means medium risk, and 0-6 means low risk.



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Know The Rates ~ Don't Over Hydrate

Work/Rest/Water Consumption Table

Applies to average sized, heat acclimated soldier wearing BDU, hot weather

Easy Work	Moderate Work	Hard Work
• Weapon Maintenance • Walking Hard Surface at 2.5 mph, < 30 lb Load • Marksmanship Training • Drill and Ceremony	• Walking Loose Sand at 2.5 mph, No Load • Walking Hard Surface at 3.5 mph, < 40 lb Load • Calisthenics • Patrolling • Individual Movement Techniques, i.e. Low Crawl, High Crawl, etc.	• Walking Hard Surface at 3.5 mph, ≥ 40 lb Load • Walking Loose Sand at 2.5 mph with Load • Field Assaults

- The work-rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specified heat category. Fluid needs can vary based on individual differences ($\pm \frac{1}{4}$ qt/h) and exposure to full sun or full shade ($\pm \frac{1}{4}$ qt/h).

- NL = no limit to work time per hour.

- Rest means minimal physical activity (sitting or standing), accomplished in shade if possible.

- **CAUTION:** Hourly fluid intake should not exceed 1½ quarts.

Daily fluid intake should not exceed 12 quarts.

- If wearing body armor add 5°F to WBGT in humid climates.

- If wearing NBC clothing (MOPP 4) add 10°F to WBGT.

Heat Category	WBGT Index, F°	Easy Work		Moderate Work		Hard Work	
		Work/Rest	Water Intake (Qt/H)	Work/Rest	Water Intake (Qt/H)	Work/Rest	Water Intake (Qt/H)
1	78° - 81.9°	NL	$\frac{1}{2}$	NL	$\frac{1}{2}$	40/20 min	$\frac{1}{2}$
2 (GREEN)	82° - 84.9°	NL	$\frac{1}{2}$	50/10 min	$\frac{1}{2}$	30/30 min	1
3 (YELLOW)	85° - 87.9°	NL	$\frac{1}{2}$	40/20 min	$\frac{1}{2}$	30/30 min	1
4 (RED)	88° - 89.9°	NL	$\frac{1}{2}$	30/30 min	$\frac{1}{2}$	20/40 min	1
5 (BLACK)	> 90°	50/10 min	1	20/40 min	1	10/50 min	1

